

Region 8 - Lower Brazos

Regional Flood Planning Group

LOWER BRAZOS REGIONAL FLOOD PLANNING GROUP

January 28, 2021

10:00 AM

VIRTUAL MEETING

Region 8 - Lower Brazos

Regional Flood Planning Group

- 1. Call Meeting to Order**
- 2. Attendance and Announcements**
- 3. Approval of Minutes from the Previous Meeting**
- 4. Public Input** *(limited to 3 minutes each)*

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5. Report and possible discussion on report from Texas Water Development Board (TWDB) staff

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6. Report and possible discussion on report by Regional Planning Sponsor

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7. Presentation by Brazos River Authority staff

7.1 BRA 101

7.2 Lower Brazos Flood Protection Planning Study



Brazos River Authority

Brazos River Authority
Aaron Abel
Water Services Manager



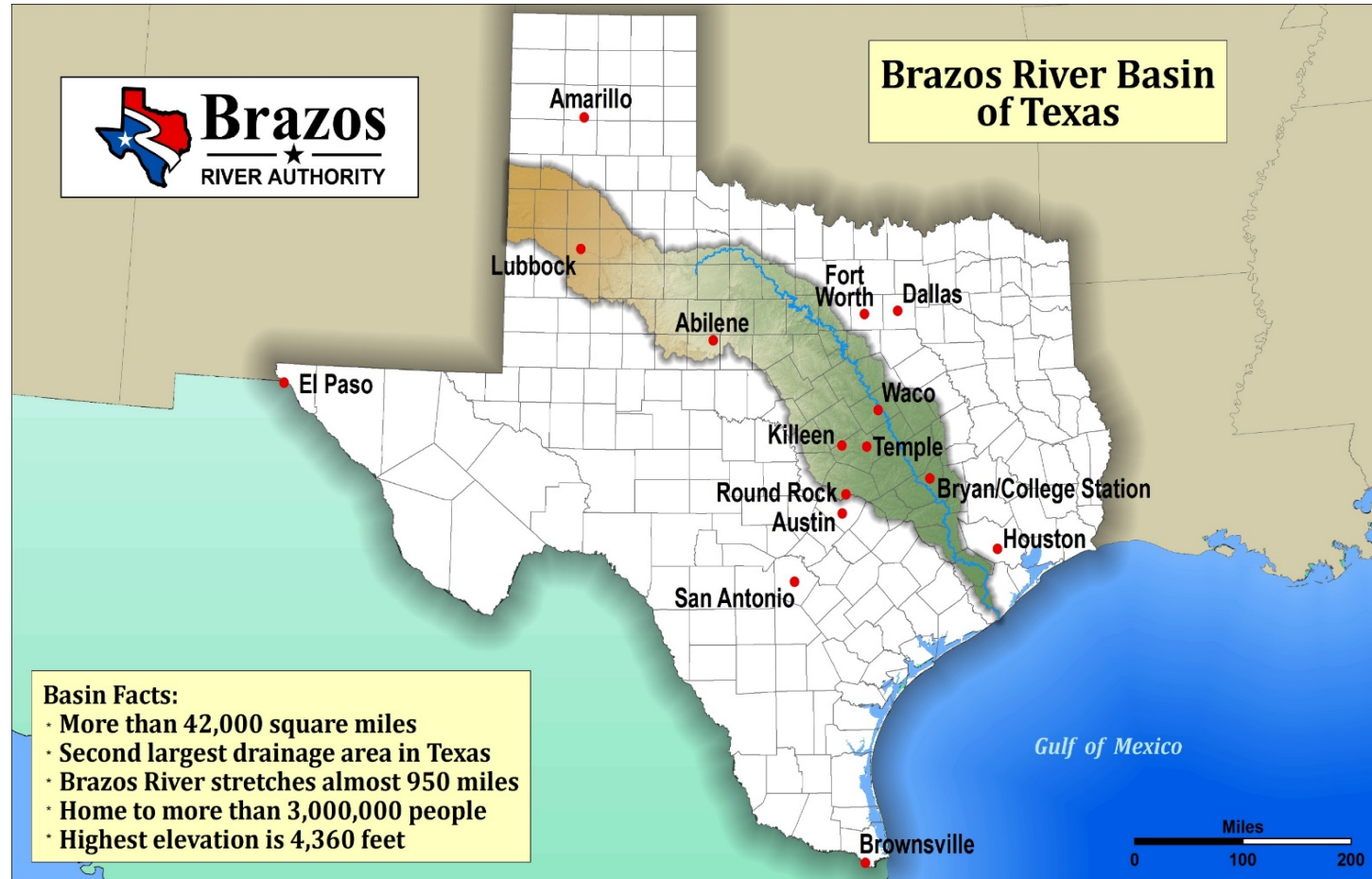


Brazos River Authority Overview

Our Mission

To develop, manage, and protect
the water resources of the Brazos River basin

- Oldest river authority in Texas
- Created by the Texas Legislature in 1929
- First entity of its kind in the nation
- Self-funded, do not levy or collect taxes
- 21 member Board





Brazos River Authority Overview

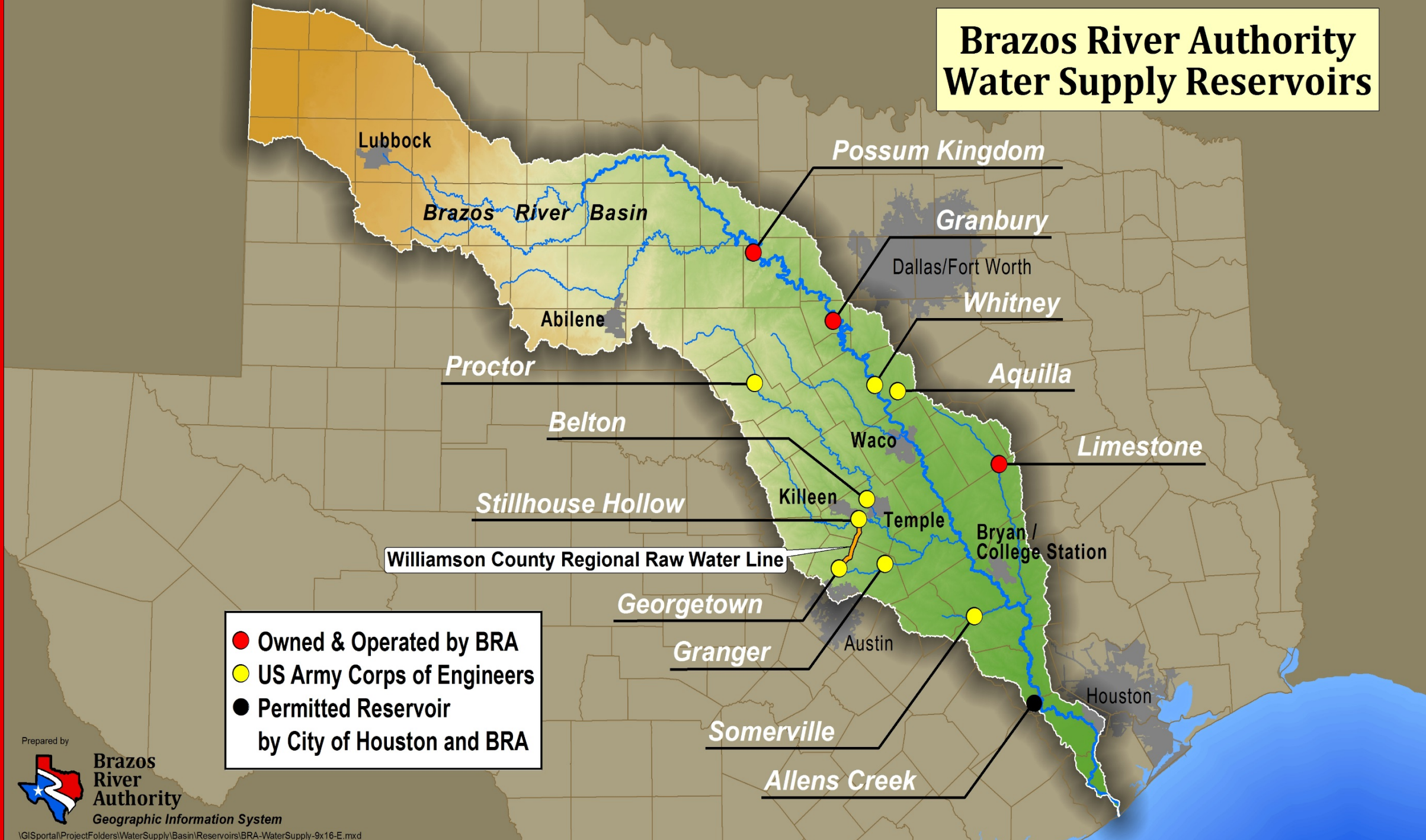
Water Supply Reservoirs

- **Built, own, and operate:**
 - *Possum Kingdom Lake, Lake Granbury, and Lake Limestone*
- **Contract with the US Army Corps of Engineers for storage at:**
 - *Lake Whitney, Lake Belton, Lake Proctor, Lake Somerville, Lake Stillhouse-Hollow, Lake Granger, Lake Georgetown, & Lake Aquilla*





Brazos River Authority Water Supply Reservoirs



- Owned & Operated by BRA
- US Army Corps of Engineers
- Permitted Reservoir by City of Houston and BRA



Brazos River Authority Overview

Treatment Operations

- **Own and operate drinking water treatment system in East Williamson County**
- **Operate regional wastewater systems for the Cities of Temple and Belton, and the Cities of Clute and Richwood**
- **Operate wastewater treatment plants for the Cities of Hutto and Sugar Land**
- **Operate water treatment plant for the City of Leander**

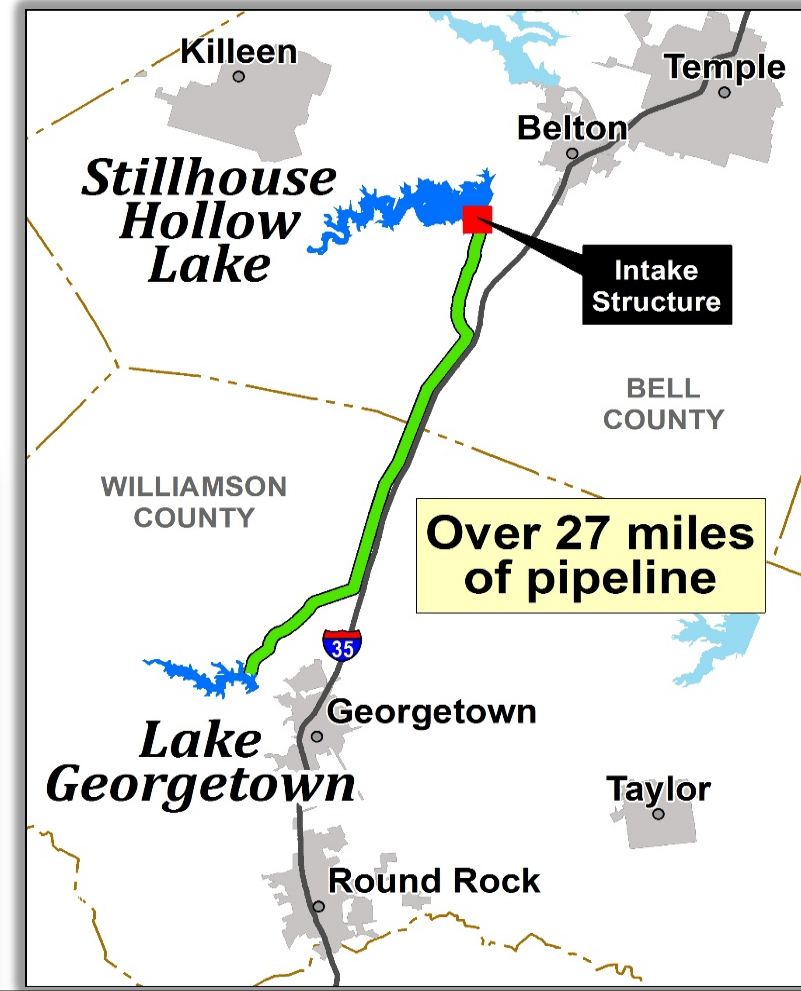




Brazos River Authority Overview

Water Conveyance

- Own and operate the Williamson County Regional Raw Water Line
 - Roughly 28 mile pipeline
 - From Lake Stillhouse Hollow to Lake Georgetown
 - Supplies City of Round Rock, City of Georgetown, and Brushy Creek Municipal Utility District





Brazos River Authority Overview

Environmental Stewardship

- **Lake and stream water quality and biological assessment**
- **NELAP accredited surface water laboratory**
- **Water quality protection and improvement projects**
- **Species-specific issues**
- **Environmental regulatory compliance and permitting**



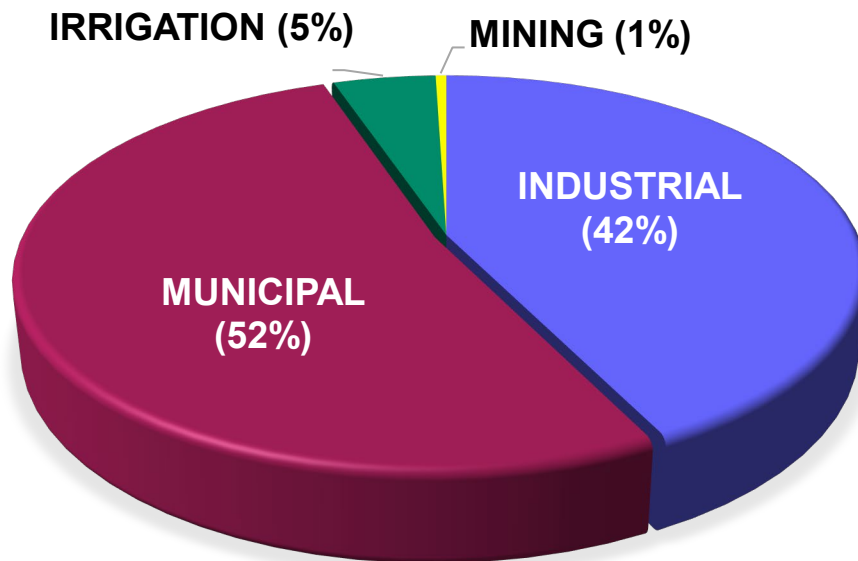


Water Contracts

Long Term Agreements

- About 160
- Contracts & commitments total about 742,000 acre-feet/yr
- Some lakeside
- Some downstream of reservoirs

LONG-TERM CONTRACTS BY TYPE
(MAY 2020)



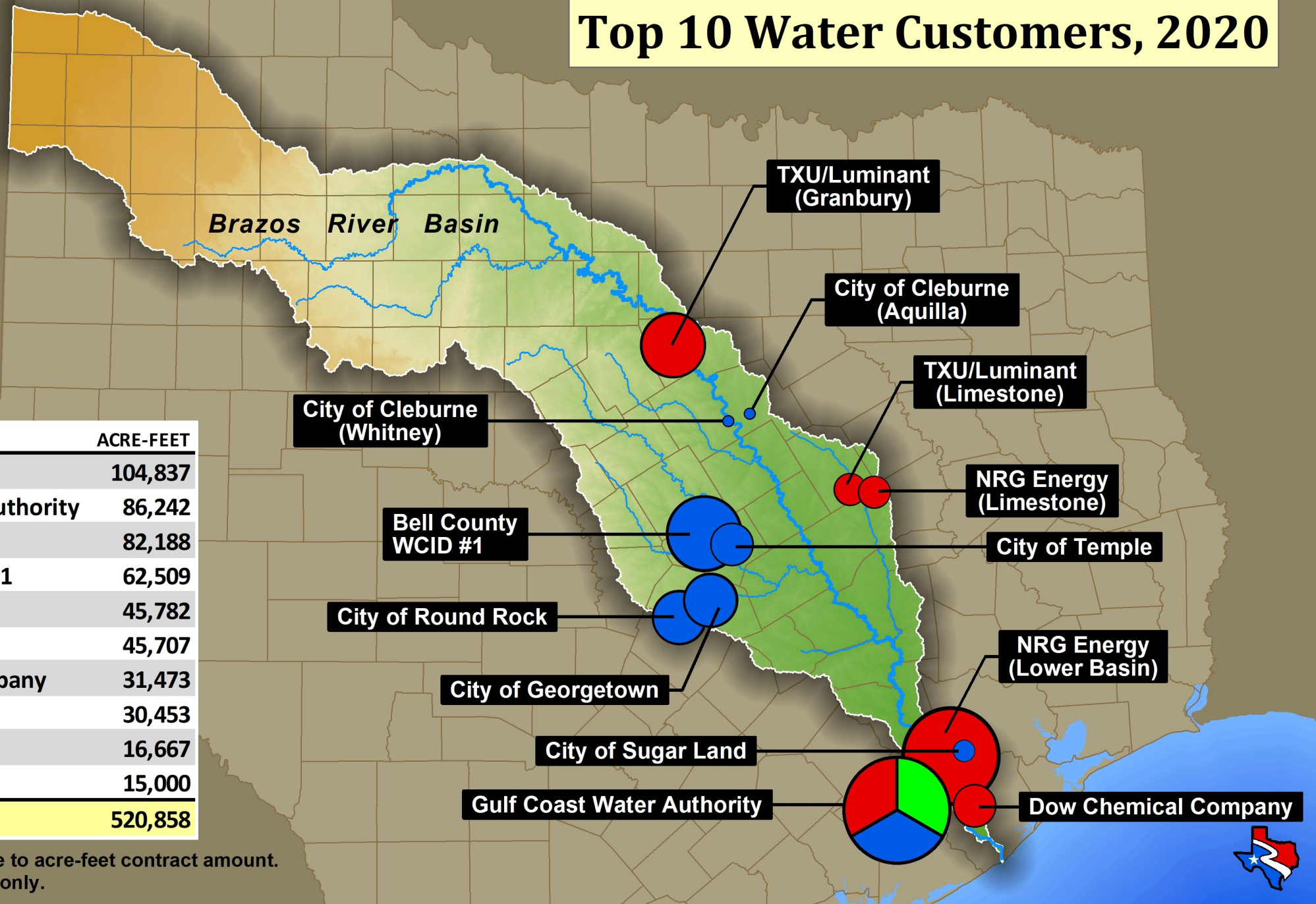


Top 10 Water Customers, 2020

Use Type

- Municipal
- Industrial
- Irrigation

| CUSTOMER | ACRE-FEET |
|----------------------------|----------------|
| NRG Energy | 104,837 |
| Gulf Coast Water Authority | 86,242 |
| TXU/Luminant | 82,188 |
| Bell County WCID # 1 | 62,509 |
| City of Round Rock | 45,782 |
| City of Georgetown | 45,707 |
| Dow Chemical Company | 31,473 |
| City of Temple | 30,453 |
| City of Sugar Land | 16,667 |
| City of Cleburne | 15,000 |
| TOTAL | 520,858 |



Circle size is proportionate to acre-feet contract amount.
Map is for general display only.





Flood Operations



- **BRA reservoirs contain no flood storage space**
- **What comes in must go out real-time**

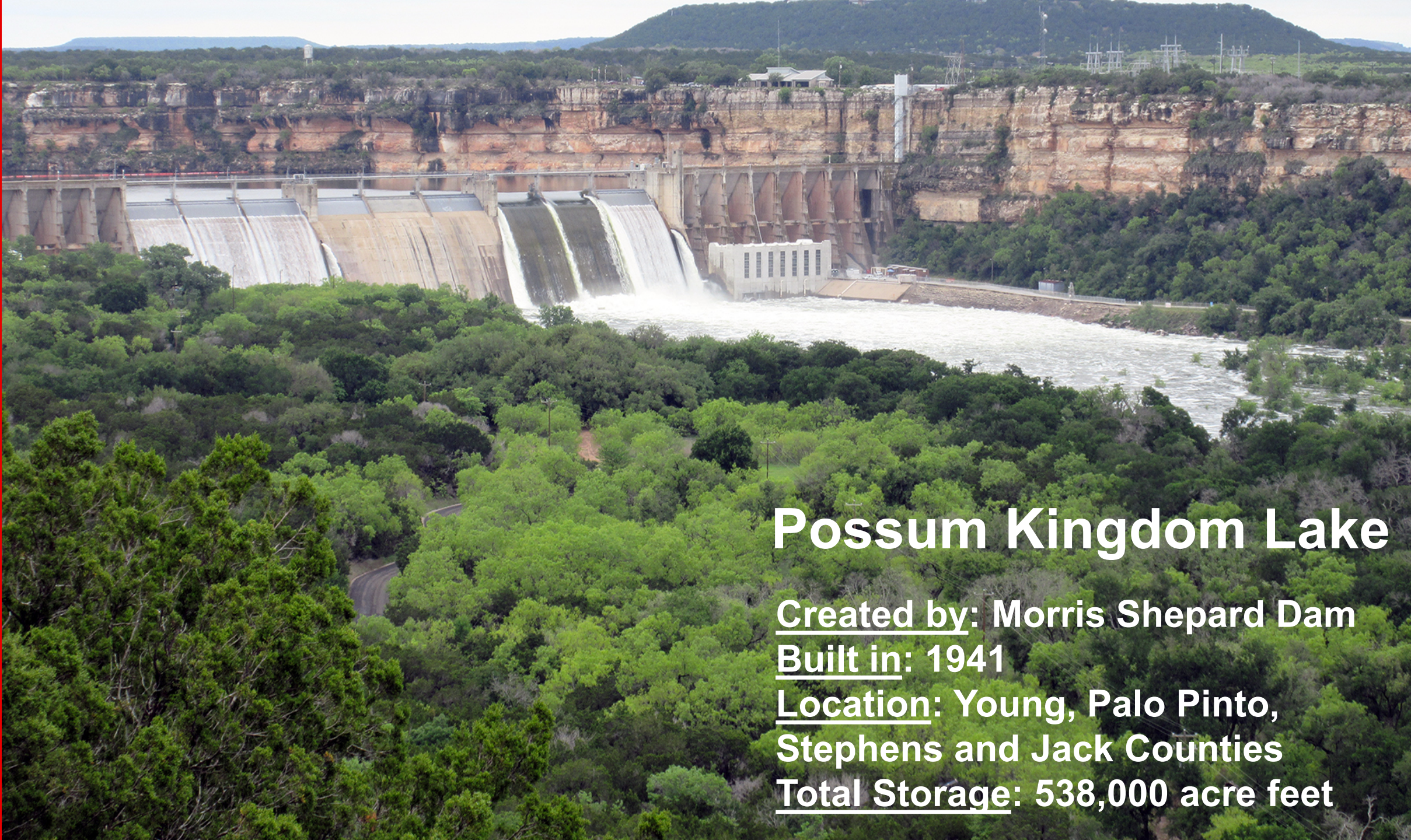


BRA Reservoir Operating Rules During Floods

- **Don't release based on weather forecasts**
- **Don't make flooding worse downstream than it would have been without the reservoir being present**
- **Prevent water overtopping flood gates**
- **Attempt to minimize flood potential on upper end of lakes**
- **Ensure good communication**
 - **BRA Central Office and Lake Office staff**
 - **Downstream Call Lists**
 - **West Gulf River Forecast Center & Other Agencies**
 - **Emergency Management Officials**
 - **General Public**
 - **Media**



Morris Sheppard Dam at Possum Kingdom Lake



Possum Kingdom Lake

Created by: Morris Shepard Dam

Built in: 1941

**Location: Young, Palo Pinto,
Stephens and Jack Counties**

Total Storage: 538,000 acre feet



Lake Granbury

Created by: DeCordova Bend Dam

Built in: 1969

Location: Hood County

Total Storage: 134,000 acre feet



Lake Limestone

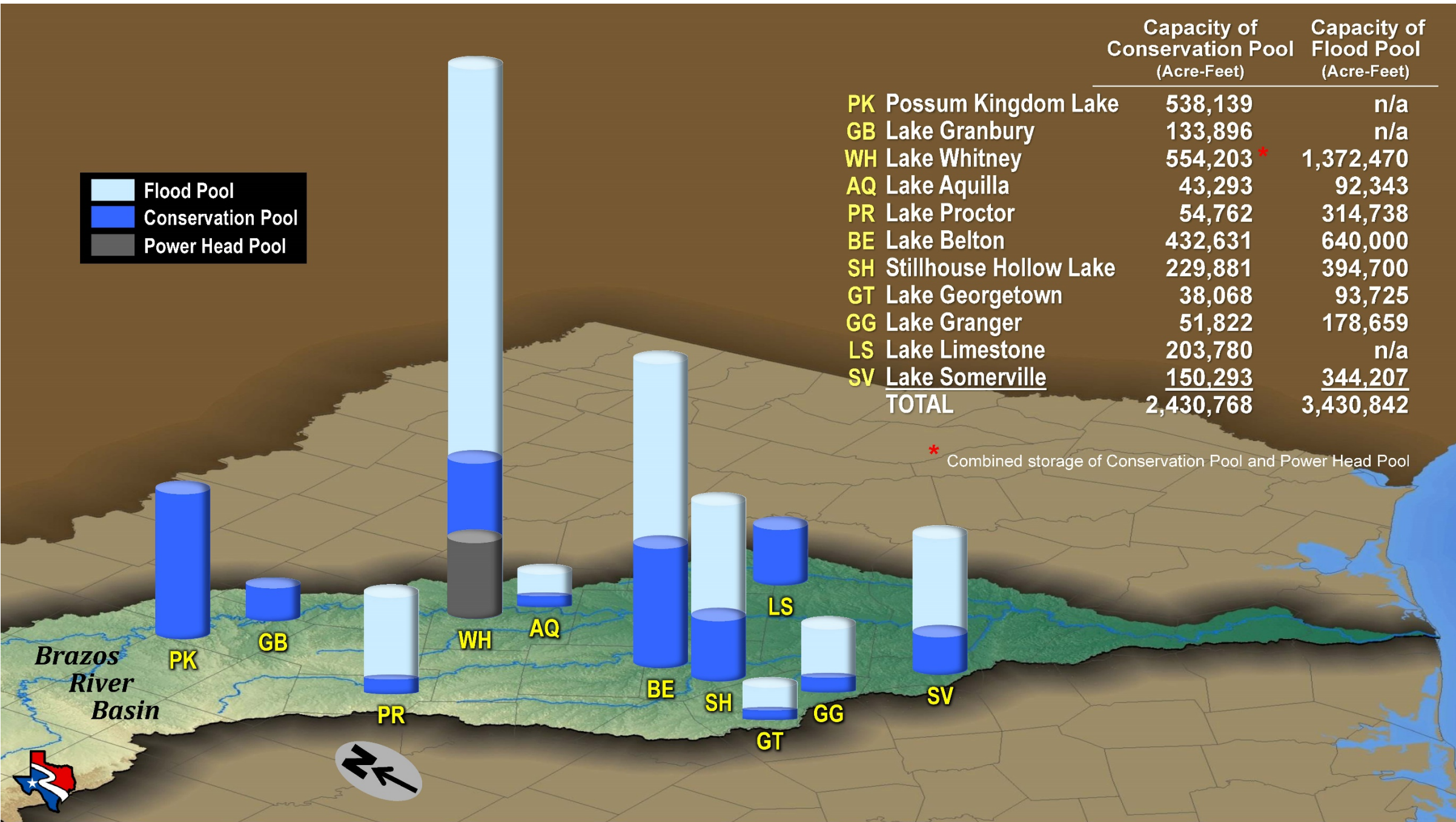
Created by: Sterling C. Robertson Dam

Built in: 1978

Location: Limestone, Robertson and Leon Counties

Total Storage: 204,000 acre feet







Brazos River Authority



**Brazos
River
Authority**



Lower Brazos Flood Protection Planning Study

**Presentation to:
Lower Brazos Regional Flood Planning Group
January 28, 2021 - Pam Hannemann**



Conducted in 2 Phases

Phase 1

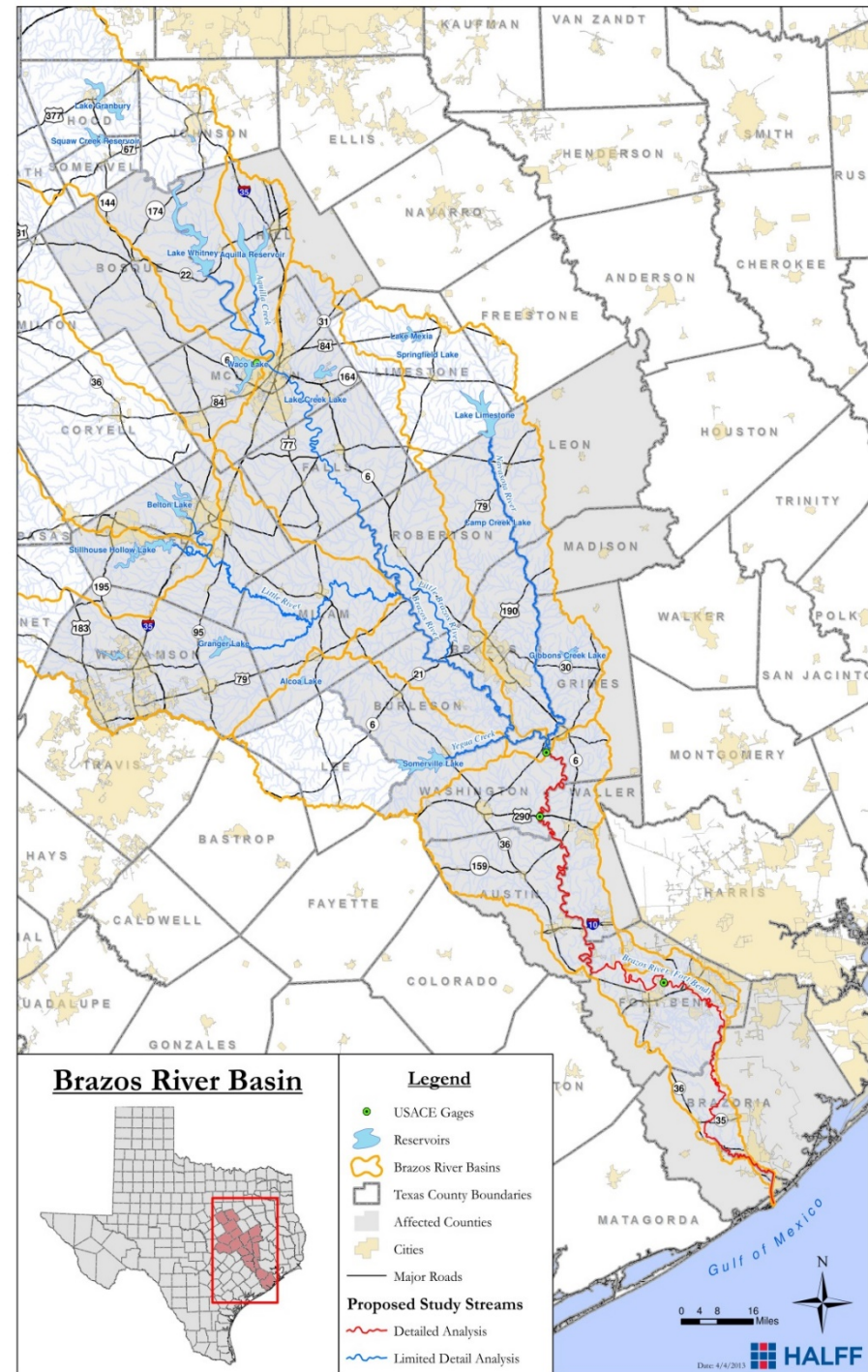
Richmond gage to the Mouth of the Brazos

Phase 2

above Hempstead gage to Richmond gage

Total Cost - \$1,723,636

Completed in 2018





Study Participants

- **TWDB – Flood Protection Grant (50% match funds)**
- **Eight (8) Local Stakeholders- Brazoria County, Fort Bend County, Waller County, Washington County, Lake Jackson, Sandy Point, Sugar Land, Velasco Drainage District, and Pecan Grove MUD**
- **Halff Associates- Technical Consultant**
- **Brazos River Authority – Grant Administrator Role**



Reasons for the Study

- **One of the fastest growing areas in the country**
- **Hydrologic and hydraulic models/data are dated outside of Fort Bend County**
- **Need for consistent modeling methodology across county boundaries**
- **Need to assess lower Brazos watershed from a comprehensive basin-wide perspective (existing conditions and alternatives)**
- **9,500 square miles of uncontrolled drainage area**



Goals of the Study

- **Quantify existing flooding issues and flood damage reduction alternatives**
- **Update hydrologic and hydraulic data for the lower Brazos River**
- **Calibrate new models to historical events and provide flood volumes, flood depths, and flood durations**
- **Facilitate land use planning, emergency response, and sound floodplain management**



Hurricane Harvey - 2017

- **Calibrated model to Hurricane Harvey storm event**
- **Additional Overflow Areas**
 - **Bessie's Creek**
 - **Ditch H**
 - **Oyster Creek**
 - **Bullhead Bayou**
 - **Brooks Lake Division**

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7. Presentation by Brazos River Authority staff

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8. Discussion and possible action regarding non-voting member liaisons designated by each RFPG to coordinate between all adjacent RFPG's and a Coastal Liaison (required per §361.11(f)(8)).

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9. Discussion on additional non-voting representatives from other agencies with interests related to regional flood planning.

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10. Discussion and possible action to select a sub-committee to review RFQ's

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11. Report from Lower Brazos RFPG Chair

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12. Discussion on new business to be considered at next meeting

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**13. Confirmation of next meeting date –
February 25, 2021**

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14. Adjourn